DOCUMENT RESUME

ED 362 188 IR 016 344

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TITLE A Survey of Media and Instructional Technology Competencies Needed by Business, Industry, Health Professions, Agencies, Military Trainers, and Independent Contractors in Northern California, USA.
PUB DATE Jan 93
NOTE 13p.; In: Proceedings of Selected Research and Development Presentations at the Convention of the Association for Educational Communications and Technology Sponsored by the Research and Theory Division (15th, New Orleans, Louisiana, January 13-17, 1993); see IR 016 300.
PUB TYPE Reports - Evaluative/Feasibility (142) -- Speeches/Conference Papers (150) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Comparative Analysis; *Competency Based Education; *Curriculum Development; Demography; *Educational Technology; *Education Work Relationship; Higher Education; *Instructional Design; Interpersonal Relationship; Job Skills; Mail Surveys; Management Development; Professional Personnel; *Professional Training; Relevance (Education); Tables (Data)
IDENTIFIERS California (North)

ABSTRACT

To determine whether professionals in business, industry, health professions, agencies, and the military are receiving the training they need to work as instructional designers and trainers, a 54-item survey was prepared based on competencies perceived necessary by a group of university professors. Items ranged from basic demographic data to the skills required by the respondent's job. Of the 267 survey instruments mailed to professional personnel, 66 usable surveys were returned. Percentages of professionals who considered each item a priority are summarized in table form. A comparison of university curricula with the data indicates that many university curricula need to be examined and revised to meet the needs of professional trainers and instructional designers. Many of the identified gaps could be filled by including courses in areas dealing with human relationships and overseeing projects or programs. The survey is included, and responses are summarized in one lengthy table. (SLD)

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Title:

A Survey of Media and Instructional Technology Competencies Needed by Business, Industry, Health Professions, Agencies, Military Trainers, and Independent Contractors in Northern California, USA

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A Survey of Media and Instructional Technology Competencies Needed by Business, Industry, Health Professions, Agencies, Military Trainers, and Independent Contractors in Northern California, USA

John E. Morlan and Mei-Yan Lu
San Jose State University
January, 1993

Purpose of the survey. Many professionals working as instructional designers and/or trainers in business and industry have been or are currently enrolled in universities programs specially designed to meet their needs, throughout the United State and abroad. In order to better prepare these professionals, and to insure they have the needed competencies, understandings, knowledge and skills, it is important for us to know the value of what we do as perceived by those who are enrolled in our preparatory programs. Do university graduate programs contain appropriate content and the emphasis necessary to prepare instructional developers for positions in business and industry? What are important training formats used by professionals working in business and industry training programs? What are some of the emerging platforms? What are some of the strengths and weakness of current university programs ? What currently offered content areas should be replaced? Strengthened? Added?

The survey instrument. San Jose State University developed a 54 item survey instrument based on selected major competencies needed by industry and business professionals as perceived by a select group of university professors working in the Bay Area of Northern California (Appendix I). Items ranged from those dealing with basic demographic data (such as gender, work setting, years in present position, salary level, degrees earned, subject areas or grades previously taught) to those dealing with designing and producing instructional materials and instructional systems, content focus and emphasis, formats for delivering instruction, delivery systems and media for instruction (such as computer-based learning, stand-up lecturing, etc.), grant and proposal writing skills, the evaluation process, and "soft" skills such as conflict resolution and stress management. Items included fill-in-the blanks items in Section I and scaled items in Section II.

Population description. Subjects included members AECT, San Francisco Bay Area Chapter, NSPI, IICS and SJSU IT graduates. Many of the subjects are significant IT leaders in the Silicon Valley in the companies such as Lockheed Aerospace, Apple, IBM, Hewlett-Packard, Amdahl, Sun Micro systems and others. A total of two hundred and sixty seven (267) survey instruments were distributed. Sixty-six (66) usable surveys were returned, a 25% return rate.

Demographic and personal data. In addition to the usual demographic data required to gain needed understanding of the survey participants, additional questions which were of interest to the researchers were included in Section I of the survey, including:

- Do male instructional designers have higher incomes than female counterparts?
- What's the salary range of the professionals who responded to the survey?

Summary of Section I Data: General Information.

A total of sixty-six (66) usable responses were collected. Note that percentages given were calculated excluding missing cases (item for which no answers were given by a particular individual survey participant).

Gender. 38 female (57.6%) and 27 males (40.9%). One subject did not specify the gender.

Current position. Subjects were asked to mark all that apply.

- Instructional designer/curriculum developer..... 42 responses
- "Stand-up" instructor..... 18 responses
- Training manager..... 7 responses
- Media and production specialist..... 7 responses
- Independent contractor..... 13 responses
- Other..... 13 responses

Responses listed under "Other" included manufacturing manager, program/project manager, consultant, academic dean, and software engineer.

There are a total of 100 responses from 66 subjects. This indicates that many of the instructional designers/trainers "wear two hats".

Work setting. Work settings of survey participants are presented below.

- Business or industry training..... 42 responses
- Health professions training..... 1 response
- Agency (law enforcement, military, etc.)..... 1 response
- College or university ..... 12 responses
- Other ..... 11 responses

Responses under "Other" included CEO of a training development company, worldwide video conference, network manager, educational technologist, leader, upper level management, high school instructor, education, multimedia software development, quality assurance, and librarian. Some participants checked more than one work setting. Seven (7) subjects did not respond to the work setting item.

Years in present position.

- 1-3 Years ..... 27 responses (41.5%)
- 4-6 Years ..... 12 responses (18.5%)
- 7-10 Years ..... 9 responses (13.8%)
- 11- 15 Years ..... 6 responses (9.2%)
- Over 15 years ..... 11 responses (16.9%)

One (one)1 subject did not respond to this item.

Salary level.

- $20,000 - $30,000 Year ..... 3 responses (4.8%)
- $31,000 - $40,000 Year ..... 11 responses (17.5%)
- $41,000 - $50,000 Year ..... 13 responses (20.6%)
- $51,000 - $60,000 Year ..... 15 responses (23.8%)
- Over $60,000 Year ..... 21 responses (33.3%)

Three (3) subjects did not respond to this item.

Degrees earned. Subjects were asked to mark all that apply and list academic majors.

- AA or AS: ..... 8 responses
- BA or BS: ..... 45 responses
- MA or MS: ..... 47 responses
- Doctorate: ..... 13 responses

Majors listed included Instructional Technology, MBA, Computer Science, Sociology, Home Economics, Mass Communications, Journalism, Business, Nursing, Political Science, History, Library Science, Social Studies, Educational Administration, Electrical Engineering, Educational Psychology, Computer Engineering, Mathematics, Art, Physics, Psychology, Hispanic Civilization, English, Advertising, Anthropology, Math, Biology, Zoology, Theater Arts, Liberal Studies, Social Science, and Ancient and Modern languages. One subject had not earned a post-secondary degree. Most frequently listed majors included Instructional Technology, Business, Education, and Social Studies.

Areas taught prior to the current assignment. Subjects were asked to mark all that apply.

- K-8 school classroom ..... 12 responses
- 9-12 school classroom ..... 18 responses
- Community College ..... 22 responses
- University ..... 18 responses
- Other ..... 21 responses

The listing under "Other" included non-profit organization, professional association, private language school, private business school, private industry, seminars, workshops, Peace Corps, sales, software industry, adult education, Fortune 500 companies, and the military.

Items which were not included on the instrument but which may be important. Items which might be added to the survey competencies found in the instrument were listed by participants. Included were public speaking, team skills, negotiation skills, vender management (developing criteria, interviewing, evaluation), management expertise, electronic performance support systems and applications, knowledge engineering, information mapping, hypertutoring, curriculum design, summative evaluation, practices in business management, crisis intervention, technical writing skills, evaluation, design and development of simulation and games, role playing, group dynamics, consulting skills, corporate training, writing skills.

The most frequently suggested items included those relating to writing skills, evaluation, and management skills.

Summary of Section II Data: Competencies, Understanding, Knowledge, Skills.

Percentages of professionals who considered the competency, understanding, knowledge or skill to be important or a high priority are presented below, followed by the rank-order of that item in relation to other items included in the survey. Percentages of respondents who were undecided, gave the item a low priority, or suggested that the item be eliminated from consideration are also presented below.

COMPETENCY, UNDERSTANDING, KNOWLEDGE OR SKILL	IMPORTANT OR HIGH PRIORITY PERCENTAGE	RANK
92.4% to 100% of the respondents consider competency to be important or high priority		
Knowledge, understanding and applications of instructional design models and principle	**100.0%**	**1**
undecided 0.0%		
low priority ... 0.0		
eliminate 0.0		
Learning needs assessment and evaluation; understanding, skills and applications	**96.9%**	**2**
undecided 3.1%		
low priority ... 0.0		
eliminate 0.0		
Project management, from inception to completion	**93.9%**	**3**
undecided 4.5%		
low priority .. 1.5		
eliminate 0.0		
Design, production and utilization of self-paced learning materials	**92.4%**	**4**
undecided 6.1%		
low priority ... 1.5%		
eliminate 0.0		
81.5% to 89.4% of the respondents consider competency to be important or high priority		
Instructor-led training, including skills necessary for giving effective presentations	**89.4%**	**5.5**
undecided 7.6%		
low priority 3.0		
eliminate 0.0		
Design, production and utilization of independent learning modules	**89.4%.**	**5.5**
undecided 7.6%		
low priority 3.0		
eliminate 0.0		
Learning theories, including adult learning and cognition	**87.9%**	**7**
undecided 9.1%		
low priority 1.5		
eliminate 1.5		

Use of computers in word processing, data bases, and spread sheets ..... 86.4 % 8

undecided 4.5%
low priority 6.1
eliminate 3.0

Computer based training and computer assisted instruction 83.3% 9

undecided 15.2%
low priority 1.5
eliminate 0.0

Project proposal writing, including all essential elements needed for funding success 83.1% 10

undecided 10.8
low priority 3.1
eliminate 3.1

Desk-top publishing, including basic design, layout and production 81.5% 11

undecided 9.2%
low priority 9.2
no response 1.5

70.3% to 78.8% of the respondents consider competency to be important or high priority

Design, production and utilization of video instructional materials 78.8% 12.5

undecided 12.1%
low priority 9.1
eliminate 0.0

Evaluation and selection of "off-the-shelf" training materials 78.8% 12.5

undecided 13.6%
low priority 7.6
eliminate 0.0

Design, production and utilization of multi-media programs, including hypermedia 75.8% 14

undecided 19.7%
low priority 4.5
eliminate 0.0

70.3% to 78.8% of the respondents consider competency to be important or high priority

Computer graphics, including basic design, layout and production 74.2% 15.5

undecided 10.6%
low priority 15.2%
eliminate 0.0

Design, production and utilization of instructional interactive video 74.2% 15.5
undecided 15.2%
low priority 10.6
eliminate 0.0

Basic research understanding, skills, competencies 73.8% 17
undecided 18.5%
low priority 7.7
eliminate 0.0

Crosscultural communication and relationship skills and understanding 70.3% 18
undecided 17.2%
low priority 10.9
eliminate 1.6

60.0% to 69.7% of the respondents consider competency to be important or high priority

Time management, including time-line development and applications 69.7% 19
undecided 18.2%
low priority 9.1
eliminate 3.0

Telecommunications, including knowledge, understanding, skills and applications 65.2% 20
undecided 24.2%
low priority..... 9.1
eliminate..... 1.5

Distance education, including administration, cost effectiveness, technical requirements 63.6% 21
undecided 27.3%
low priority 9.1
eliminate 0.0

Design, production and utilization of displays, including interactive and self-instructional displays 61.5% 22
undecided 15.4%
low priority 20.0
eliminate 3.1

60.0% to 69.7% of the respondents consider competency to be important or high priority

Administration and management models and principles 60.6% 23
undecided 27.3%
low priority 9.1
eliminate 3.0

Client centered management theory and implementation 60.0% 24
undecided 27.7%
low priority 9.2
eliminate 3.1

51.5% to 56.1% of the respondents consider competency to be important or high priority

Interpersonal relationship theory, skills and applications 56.1% 25
undecided 24.2%
low priority 12.1
eliminate 7.6

Financing, budgeting and depreciation 55.4% 26
undecided 30.8%
low priority 13.8
eliminate 0.0

51.5% to 56.1% of the respondents consider competency to be important or high priority

Design, production and utilization of overhead projection transparencies 54.5% 27
undecided 18.2%
low priority 22.7
eliminate 4.5

Organizational development theory and applications 52.3% 28
undecided 24.6%
low priority 20.0
eliminate 3.1

Futures studies, trend indicator extrapolations, development of alternative futures 51.6% 29
undecided..... 26.6%
low priority 18.8
eliminate 3.1

51.5% to 56.1% of the respondents consider competency to be important or high priority

Design, production and utilization of audio instructional materials 51.5% 30.5
undecided 18.2%
low priority 28.8
eliminate 1.5

Conflict resolution theory, skills and applications, and stress management 51.5% 31.5

undecided..... 22.7%
low priority 16.7
eliminate 9.1

41.3% to 44.6% of the respondents consider competency to be important or high priority

Design, production and utilization of photographic instructional materials 44.6% 32

undecided 26.2%
low priority 26.2
eliminate 3.1

Design, production and utilization of flip charts, posters and other flat graphics 41.5% 33

undecided 29.2%
low priority 21.5
eliminate 7.7

Facilities design and/or modification for media design, production, utilization 41.3% 34

undecided 36.5%
low priority 15.9
eliminate 6.3

Conclusions. A comparison of university curricula with the data summary presented above indicates that many university curricula need to be examined and revised in order to meet the needs of professional trainers and instructional designers in the field.

Most university programs include many of the "basics" needed by trainers and instructional designers, but have "gaps" which could be filled by including courses in areas dealing with human relationships and overseeing projects or programs.

Facilities design and some of the more familar and comfortable media were not considered as important as courses or competencies in dealing with other human beings, and management and administration.

Further research is needed. The questionnaire could be revised to include addtional items suggested by participants in this study. More subjects and subjects in other settings should be surveyed. Although many trainers work in agencies, only one agency trainer was included in the survey. Health professions trainers also need to be surveyed in depth.

Additional data have been received since the conclusion of the writing of this report. A more comprehensive analaysis of data will be prepared for publication in the near future.

For a copy of the results or additional information concerning the study, please contact:

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A SURVEY OF MEDIA AND INSTRUCTIONAL TECHNOLOGY COMPETENCIES NEEDED BY BUSINESS, INDUSTRY, HEALTH PROFESSION, AGENCY AND MILITARY TRAINERS IN NORTHERN CALIFORNIA, USA FALL 1992

DIRECTIONS FOR RESPONDING TO THE SURVEY INSTRUMENT. Please respond by filling in your response on the enclosed Scantron answer sheet next to the number which corresponds with the number of the question on the enclosed survey instrument. Skip the left side of the Scantron sheet where it needs name and social security numbers,etc. All information provided by you through your individual responses to the survey instrument will be kept strictly confidential. Please return the questionnaire And Scantron form in the envelope provided for your convenience, or fax the materials to us at (408) 924-3713. If you would like to have a summary of our findings, please write your name and address on the back of this instrument or call Mei-Yan Lu at (408) 924-3645.

PART I: GENERAL INFORMATION

Mark all that apply with a soft lead pencil on the enclosed answer form, for items 1 - 53.

1. Gender: (a) Female
   (b) Male

Items 2 -7 describe your current position, please mark the one(s) that best describe(s) your job:

2. Position: Mark all that apply.
3. (a) Instructional designer/curriculum developer
4. (a) "Stand-up" instructor
5. (a) Training manager
6. (a) Media and production specialist
7. (a) Independent contractor
   Other: Please describe here_____

8. Work setting: (a) Business or industry training
   (b) Health professions training
   (c) Agency (law enforcement, military, etc.)
   (d) College or university
   Other: Mark "e". Please list _____

9. Years in present position:
   (a) 1-3 Years
   (b) 4-6 Years
   (c) 7-10 Years
   (d) 11- 15 Years
   (e) Over 15 years

10. Salary level: (a) $20,000 - $30,000 Year
    (b) $31,000 - $40,000 Year
    (c) $41,000 - $50,000 Year
    (d) $51,000 - $60,000 Year
    (e) Over $60,000 Year

Items 11 - 14. Degrees earned. Please mark the degree(s) you have:

11. (a) AA or AS: List degree major _____
12. (a) BA or BS: List degree major _____
13. (a) MA or MS: List degree major _____
14. (a) Doctorate: List degree major _____

Items 15 - 19. Areas you have taught. Please mark all that apply:

15. (a) K-8 school classroom
16. (a) 9-12 school classroom
17. (a) Community College
18. (a) University
19. Other: Mark "e". Please list_____

Section II: Instructional Technology Professional Knowledge, Understanding and Competencies

Please consider each of the items which follow in light of what you feel is important for performing as a highly competent and well-rounded instructional technology professional. **Do not limit** your responses by considering only what is needed by you to perform well in your current position.

Mark "a" if you consider the item listed to be essential; should be assigned a high priority.
Mark "b" if you consider the item listed to be important; should not be assigned a very high priority.
Mark "c" if you are undecided as to whether the item is important or unimportant.
Mark "d" if you consider the item to be relatively unimportant; should be assigned a low priority.
Mark "e" if you consider the item to be irrelevant; should be eliminated from consideration.

20. Knowledge, understanding and applications of instructional design models and principles.
21. Instructor-led training, including skills necessary for giving effective presentations.
22. Use of computers in word processing, data bases, and spread sheets.
23. Computer graphics, including basic design, layout and production.
24. Desk-top publishing, including basic design, layout and production.
25. Computer based training and computer assisted instruction.
26. Design, production and utilization of instructional interactive video.
27. Design, production and utilization of multimedia programs including hypermedia programs.
28. Telecommunications, including knowledge, understanding, skills and applications.
29. Distance education, including administration, cost effectiveness, technical requirements.
30. Design, production and utilization of overhead projection transparencies.
31. Design, production and utilization of audio instructional materials.
32. Design, production and utilization of video instructional material.
33. Design, production and utilization of photographic instructional materials, including prints and slides.
34. Design, production and utilization of instructional flip charts, posters and other flat graphics.
35. Design, production and utilization of effective displays, including interactive and self-instructional displays.
36. Design, production and utilization of self-paced learning materials.
37. Design, production and of utilization of independent learning modules.
38. Evaluation and selection of "off-the-shelf" training materials.
39. Learning needs assessment and evaluation: understanding, skills and applications.
40. Learning theories, including adult learning and cognition.
41. Conflict resolution theory, skills and applications, and stress management.
42. Interpersonal relationship theory, skills and applications.
43. Administration and management models and principles.
44. Time management, including time-line development and applications.
45. Client centered management theory and implementation.
46. Organizational development theory and applications.
47. Project proposal writing, including all essential elements needed for funding success.
48. Program management, from inception to completion.
49. Finance, budgeting and depreciation.
50. Basic research understanding, skills, and competencies.
51. Crosscultural communication and relationship skills and understanding.
52. Futures studies, trend indicator extrapolations, development of alternative futures.
53. Facilities design and/or modification for media design, production, utilization.

Please add items you think are important that are missing from the preceding list in the space below.

Thank you very much for your time, and sharing your professional judgement with us.

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